

Application No. 09/522,349
Response to Office Action of December 27, 2006

REMARKS/ARGUMENTS

At the outset, Applicants thank Examiner Ferguson for providing guidance and clarity in the outstanding Office Action, which is extremely helpful to the Applicants as they approach each issue raised therein.

Claim 39 is new and depends from Claim 18. Claims 40-42 are also new and depend from Claims 39, 31, and 8, respectively. Support for Claim 39 is found at originally filed Claim 8. Support for Claims 40-42 is found at page 4, line 22, of the originally filed application. No new matter is believed to be introduced by new Claim 39. Claims 1-3, 6, 8, 18, 20-27, 29 and 31-42 are pending.

The rejection of Claims 1-3, 6, 8, 20-27, 29 and 31-38 under 35 U.S.C. §103(a) over US Patent 4,161,422 (US'422) is traversed below.

The claimed invention relates to a crack-resistant printing paper or board containing a cellulose fiber network web and a thin layer of a polymer material impregnated into the web in discontinuous geometrical formations, where the polymer material is no more than 5% of the basis weight of the paper or board.

US'422 discloses, at best, a filter medium containing a web of fibers that are wet laid then dried, then impregnated with a resin to selectively place the resin in specific areas across the medium's width, height, and cross section. Further, US'422 discloses that the medium should be impregnated with from 9 to 15wt% of

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resin by weight of the web. Still further, US'422 discloses that it is more preferable to impregnate the medium with from 11 to 15wt% of resin by weight of the web (See Column 2, lines 23-25). Accordingly, US'422 clearly discloses that it is desirable to select the amount of resin in a manner that the selection preferably occurs towards amounts that are greater than 10wt% based upon the weight of the web.

To summarize recent prosecution to date, Applicants have submitted that US'422 fails to disclose impregnating the web with no more than 5% of the polymer material based upon the basis weight of the paper or board. It appears as if the Office agrees with Applicants. However, it is the Office's position that while US'422 fails to specifically disclose impregnating the web with no more than 5% of the polymer material based upon the basis weight of the paper or board, WO'869 does not teach away from doing so and/or appears silent. Further, it is the Office's position that Applicants carry the burden of demonstrating criticality of impregnating the web with no more than 5% of the polymer material based upon the basis weight of the paper or board. Based upon this assertion, the Office appears to take the position that there is sufficient motivation provided within the disclosure of US'422 to the skilled artisan so as to impregnate the web with no more than 5% of the polymer material based upon the basis weight of the paper or board; thereby rendering the claimed invention obvious in view of US'422.

Applicants respectfully disagree with the Office's interpretation of US'422. US'422 is, in fact, not silent as to the amount of resin that should be impregnated

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into the web. As mentioned above, US'422 discloses that the medium should be impregnated with from 9 to 15wt% of resin by weight of the web. Still further, US'422 discloses that it is more preferable to impregnate the medium with from 11 to 15wt% of resin by weight of the web (See Column 2, lines 23-25). Accordingly, US'422 clearly discloses that it is desirable to select the amount of resin in a manner that the selection preferably occurs towards amounts that are greater than 10wt% based upon the weight of the web. It should be noted that 9wt% (i.e. the lowest amount disclosed by US'422) is 80% greater than that of the largest amount of polymer to be impregnated by the claimed invention (see pending Claims 1 and 25). Accordingly, the conclusion by the Office that US'422 is silent with respect to the amount of resin to be impregnated into the web lacks any support from within the US'422 reference itself; and, there is no room left for the skilled artisan to optimize below 9wt% and above 15wt% by the active disclosure of US'422.

The general spirit of the disclosure of US'422 and the utility of the invention described therein is to impregnate from 9wt% to 15wt% of resin into the web based upon the weight of the web. But, US'422 does not stop here. In fact, US'422 discloses that within this range, it is more preferable to add larger amounts of resin, not smaller amounts, when it discloses a more preferable range of from 11wt% to 15wt% of the resin based upon the weight of the web. US'422 does not, as the Office suggests, state that the web may be impregnated with any amount of resin. In fact, US'422 clearly states a range that is, at best, from 80% to 300% greater than that of the claimed invention. Then, US'422 actively discloses that it would be more

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desirable to use the larger amounts of resin within this range (i.e. from 11wt% to 15wt%).

In light of the above, US'422 clearly demonstrates a desire to the reader and the skilled artisan to use much larger amounts of resin to impregnate the web disclosed therein than that of the claimed invention. Anything else would actually destroy the function of the web and resultant medium.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Obviousness can only be established by modifying the teachings of US'422 to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the reference itself or in the knowledge generally available to one of ordinary skill in the art. *In re Kotzab*, 217 F.3d 1365. In the present case, the Office is relying on alleged implicit motivation within US'422 to modify the disclosure therein towards the claimed invention. The proper inquiry is whether there is something in the prior art as a whole to suggest the desirability to modify the disclosure therein. *In re Fulton*, 391 F.3d 1195.

In the present situation, US'422 links the amount of resin to impregnate the web to the ability of the resultant medium to have improved contaminant holding

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capacity and efficiency (see Column 2, lines 6-33, and Claim 1). The only way that US'422 discloses that this can be achieved is through the selective impregnation of from 9 to 15wt% of a resin across the cross-section, height and width of the web. Accordingly, US'422 demonstrates that the desirability of impregnating from 9 to 15wt% of a resin into a web. One reading US'422 would not be motivated to impregnate the web with no more than 5% based upon the basis weight of the paper or board because such circumstances would destroy the means by which US'422 teaches to improve contaminant holding capacity and efficiency, i.e. with from 9 to 11 wt%. Accordingly, there is no desirability found in US'422 to impregnate a web with no more than 5wt% of a resin. Since the proper inquiry regarding motivation to modify (i.e. the first prong of building a *prima facie* case of obviousness) is whether there is something in the prior art as a whole to suggest the desirability to modify the disclosure therein; (*In re Fulton*, 391 F.3d 1195) and, US'422 fails altogether to afford a desirability to impregnate the web with no more than 5% of a polymer based upon the basis weight of a paper or board, then US'422 alone can not possibly be deemed to support a *prima facie* case of obviousness over printing paper or board containing a thin layer of not more than 5% polymer impregnated in a web of cellulose fibers based upon the basis weight of the paper or board.

In light of the above, US'422 fails to disclose, much less suggest, the claimed invention. Applicants respectfully request the Office to withdraw this ground of rejection.

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It should be noted that the Office continually indicates that US'422 suggests the claimed invention because it does not teach away from the claimed invention and Applicants have not demonstrated criticality. Applicants respectfully submit that, in view of the above, "teaching away" is but only one aspect of determining the appropriateness of a *prima facia* case of obviousness. As discussed above, there are many factors that must be considered to establish a *prima facia* case of obviousness and the tendency for a reference to "teach away" is but one of many indicia for this analysis. Clearly, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings (as discussed above). Clearly, US'422 fails to provide this suggestion or motivation, if not demonstratively "teaches away" from the claimed invention as outlined above.

In light of all of the above, the requirement for Applicants to provide evidence of criticality is premature. In fact, the Office is putting the cart before the horse. Before the burden of establishing criticality is placed on the Applicants, the Office carries its burden to establish a *prima facia* case of obviousness. As discussed above, Applicants respectfully submit that the Office has not met its burden based upon US'422 alone.

In light of all of the above, Applicants respectfully request withdrawal of this ground of rejection.

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The rejection of Claim 18 under 35 U.S.C. §103(a) over US Patent 4,161,422 (US'422) in combination with US Patent 4,488,932 (US'932) is traversed below.

The Office has indicated that US'422 fails to disclose or suggest the embodiments of Claim 18. As a reminder, Claim 18 relates to a crack-resistant printing paper or board containing a cellulose fiber network web and a thin discontinuous polymer material impregnated into the web in geometrical formations, where the polymer is may be at least one of poly-butadiene, acrylonitrile-butadiene, ethylene vinyl acetate-butadiene, polyhydroxybutyrate-butanoate and a cellulose acetate butyrate and the polymer material is no more than 5% of the basis weight of the paper or board. In fact, Claim 18 appears completely devoid of styrene butadiene being the claimed polymer. Accordingly, Applicants do not understand the relevance that US'932 plays as applied to Claim 18. If US'422 fails to disclose the above-claimed polymers of Claim 18, Applicants do not know how the fact that US'932 discloses styrene butadiene has any impact on the patentability if Claim 18. Even if US'932 is combined with US'422, Applicants respectfully submit that the fact the polymer may be styrene butadiene has absolutely no patentable impact on the claimed poly-butadiene, acrylonitrile-butadiene, ethylene vinyl acetate-butadiene, polyhydroxybutyrate-butanoate and a cellulose acetate butyrate as being the claimed polymer. Accordingly, not all of the claimed embodiments of Claim 18 is disclosed or suggested by the combination of US'422 with US'932; and withdrawal of this ground of rejection is respectfully requested.

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In addition, Applicants respectfully submit that US'422 and US'932 are not combinable because there is absolutely no motivation to combine the two references. In order for motivation to combine to be found, one of three things must be satisfied: a) the reference must be aimed at solving a similar problem; b) the teachings of the prior art; and c) the knowledge level of a person skilled in the art.

US'422 and US'932 are related to completely different problems in two different fields. US'422 is related to improving the structure and function of filter paper by selective placement of resins via impregnating them selectively across a cross section of the filter paper itself and patterning the same across the length and width parameters of the filter paper. US'932 is related to bulking paper substrates by adding certain components to the wet end of a paper machine and/or process. Applicants respectfully submit that bulking paper substrates by adding certain components to the wet end of a paper machine and/or process is a completely different field and completely different problem that is separate and distinct from improving the structure and function of filter paper by selective placement of resins via impregnating them selectively across a cross section of the filter paper itself and patterning the same across the length and width parameters of the filter paper.

To further support Applicants position, it should be noted that US'932 indicates that the components, such as styrene butadiene (binders and bonding agents) should be added at the wet end of a paper machine to make up for non-bonding fibers added at this point in papermaking (see Column 15, line 64, to

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Column 16, line 12). By doing so, US'932 is disclosing that the binder will be dispersed throughout the entire cross section, width, and height of the resultant paper substrate. This is in exact opposite to the disclosure of US'422 since US'422 aims to solve the problem in a completely unrelated art by impregnating a resin selectively across a cross section of the filter paper itself and patterning the same across the length and width parameters of the filter paper. Accordingly, if one were to modify US'422 with the disclosure of US'932, one would distribute bonding agents and/or binders like styrene butadiene throughout the cross section, height, and width of the paper substrate. This would clearly destroy the operability of the invention disclosed by US'422 and one reading US'422 would be dissuaded from modifying its disclosure toward that of US'932 because US'422 teaches away from doing so with no expectation of success. Accordingly, none of a)-c) is satisfied to support motivation to combine US'942 with US'422.

In addition, it should be noted that Claims 8, 31 and 39 are all drawn to embodiments of the claimed invention in which a surface of the claimed paper or board substrate is coated. The Office has rejected Claims 8 and 31 in view of US'422, but has failed completely to identify where specifically in US'422 there is disclosed that the paper described therein is also coated. Applicants have searched and searched the US'422 reference and can not find any such disclosure. In fact, US'422 discloses that after the web is laid and impregnated with a resin, the impregnated web may be heated to dry it and to effect partial advancement of the resin as may be desired in the case of thermosetting resins (see Column 4, lines 8-

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11). There is no other step disclosed therein. In fact, US'422 teaches away from any such step because it discloses:

"In this form it can be stored or shipped." See column 4, lines 11-12.

US'422 is completely devoid of any suggestion, much less active disclosure, that the paper described therein may contain a coating on the surface of the impregnated web. Accordingly, Applicants respectfully submit that not all of the claimed embodiments of Claims 8, 31, and/or 39 are disclosed or suggested by the US'422.

Still further, the Office's attention is drawn to new Claims 40-42 in which the coated surface of the claimed paper or board contains print. Applicants also respectfully submit that US'422 fails to disclose printing on the coated surface of a printing paper or board. Moreover, Applicants respectfully submit that the entire spirit of US'422 is to solve a specific problem as related to filter paper, failing to mention anywhere therein to coat and print thereon the filter paper's surface. Because the filter paper end use is the only one mentioned by US'422, there is absolutely no motivation to be found in US'422 to coat the filter paper (which, taking the reference in its entirety, would render the filter paper of US'422 inoperable), much less print on a surface of the filter paper described by US'422. In fact, there is no motivation to print on a surface of a filter paper since such print has no correlation with a filter paper's improved capacity and efficiency functions as described by US'422.

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In addition, since the Office is only relying on US'932 to demonstrate that styrene butadiene is a bonding agent or binder that could be used according to the bonding agent or binder resin described in US'422, clearly US'932 fails altogether to cure the deficiencies of US'422 in the case that such combination is maintained notwithstanding the above comments in opposite thereto such combination.

In light of all of the above, Claims 8, 31, and 39-42 clearly are neither disclosed or suggested by US'422 alone or in combination with US'932.

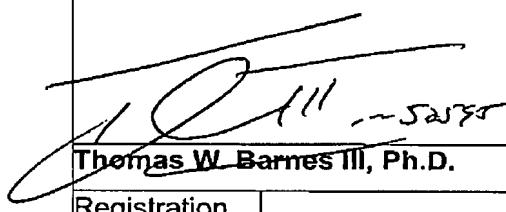
Accordingly, Applicants respectfully request that all grounds of rejection be withdrawn.

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Applicants respectfully submit that the present application is now in condition for allowance. Favorable reconsideration is respectfully requested. Should anything further be required to place this application in condition for allowance, the Examiner is requested to contact below-signed by telephone.

Please charge the amount of **\$120.00** required for the request for extension of time to our Deposit Account No. 09-0525. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 C.F.R 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 09-0525. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time.

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